



Note-taking Worksheet

The Nature of Science

Section 1 Science All Around

A. Scientists are like _____ trying to solve mysteries.

1. Scientists gather information and _____ in their search for answers to questions.
2. A _____ is an educated guess about a possible solution to a mystery.

B. Scientists use a problem-solving procedure called the _____; it includes identifying a problem, gathering information, making hypotheses, testing the hypotheses, analyzing the results, and drawing conclusions.

C. _____ is a process of observing, studying, and thinking about things to gain knowledge to better understand the world.

1. Any attempt to find out _____ and _____ things look and behave the way they do is a performance of science.

2. **Earth science** focuses on one area of scientific study of Earth and space.

D. Testing, or _____, is an important part of science.

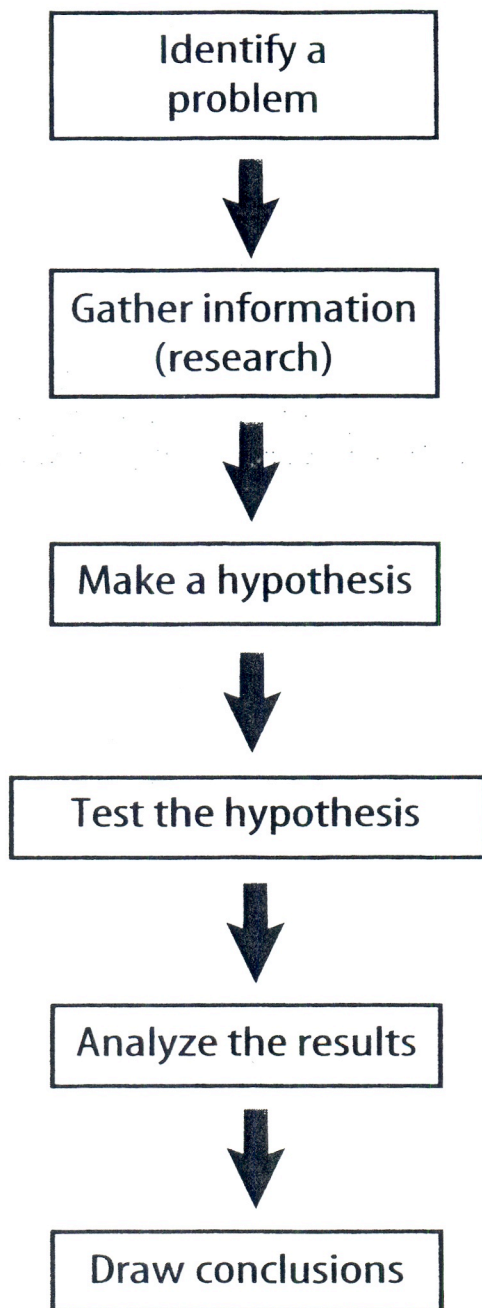
1. _____ are factors that can change in an experiment.
 - a. An experiment should be designed so that only _____ variable at a time is tested.
 - b. The variable that changes, the one being tested in an experiment, is the _____.
 - c. **Constants** are variables that _____ change.
 - d. A _____ is the variable being measured to determine the effects of the independent variables.
2. A _____ is a standard to which results can be compared; the same experiment done with the same variables, except it omits the _____ variable.
3. For results to be valid or reliable, tests should be repeated _____ times.
4. _____ and recording data and discoveries are important parts of an experiment.
 - a. Data and observations must be analyzed to draw _____.
 - b. Unexpected _____ may be important and should be recorded, as well.

SECTION

1

Teaching Transparency
Activity

Scientific Method



1. What is the name of the problem-solving procedure that scientists use?

2. Why are scientific methods used?

3. What is a hypothesis?

4. In an experiment, which variable is the one that the experimenter changes? Which variable is measured?

5. What are two problems in everyday life that could be solved using scientific methods?



Assessment Transparency Activity

The Nature of Science

Directions: Carefully review the table and answer the following questions.

Steps in the Scientific Method	
Steps	Procedures
Identifying the problem	Pick a question to be tested
Researching the problem	Collect information
Forming a hypothesis	Make an informed guess about the results
Testing the hypothesis	Do an experiment and collect data
Analyzing the results	Arrange the data and compare the data to the hypothesis
Conclusion	From the analysis of the data, suggest a final answer

- According to the table, looking up information on the computer about different types of soil is an example of ____.
 A identifying a problem C analyzing results
 B researching D hypothesis testing
- According to the table, which step does not involve data collected in an experiment?
 F identifying a problem H analyzing results
 G hypothesis testing J conclusion
- Which step of the scientific method presents the final results of your hypothesis?
 A identifying a problem C hypothesis testing
 B researching D conclusion